P134: Optimizing effects of botulinum toxin treatment by post injection activity

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Currently, the best treatment option for idiopathic cervical dystonia (CD) is application of botulinum toxin type-A (BoNT-A) into the affected muscles. However, there is striking difference between the injection intervals given in everyday practice. The beneficial effects of BoNT-A in CD lasts for 3-4 months and repeated injections are needed. Increased motor activity increases presentation of synaptic vesicle protein (SV2), specific receptor for BoNT-A, that might results in higher efficacy of BoNT-A. The aim of present study was to investigate whether post injection activation program may increase the duration of clinical benefit.

A total of 43 patients (23 female and 20 male) who have been improved significantly to BoNT-A injections during first year of treatment were enrolled into this single-centre, single-blind study. Each patient was injected with previously used effective dose (100-200 U of ona and/or incobotulinumtoxinA, BoNT-A). CD was assessed using validated scales for dystonia (TWSTRS, ADL, pain score) every 2 weeks. Only after second injection of BoNT-A (second study period: 4 months after first injection), activation and physical therapy, with help of physiotherapist, was performed immediately after BoNT-A administration and 30 minutes daily during 2 weeks post injections. Physical activity protocol included active stretching to increase the muscle activity.

BoNT-A was effective in improving CD symptoms during both treatment periods. However, the duration of clinical improvement was significantly longer ($p<0.05$) during second study period when the same dose of BoNT-A was administered in combination with physiotherapy.

Our results indicate that post injection activation could increase the duration of BoNT-A effect, and that physiotherapy could prolong intervals between injections.

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